United States Patent [19]

Codomo et al.

[11] **3,946,364**

[45] **Mar. 23, 1976**

[54] **METHOD AND APPARATUS FOR SENSING, STORING, AND GRAPHICALLY DISPLAYING OVER-TEMPERATURE CONDITIONS OF JET ENGINES**

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[22] Filed: **Jan. 8, 1975**

[21] Appl. No.: **539,393**

[52] **U.S. Cl.** **340/172.5**; 73/340

[51] **Int. Cl.**[2] **G06F 1/00**; G01K 13/00

[58] **Field of Search** 340/172.5; 73/340, 342, 73/343.5

[56] **References Cited**

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[57] **ABSTRACT**

The required frequency of inspection, servicing and overhauling of jet engines is to a large extent determined by the history of excessive or over-temperature conditions of each engine. In order to monitor and record each such over-temperature condition, an indicator device is provided having electronic circuitry for processing a temperature signal from the jet engine and a light emitting diode matrix for graphically displaying each over-temperature incident. When the jet engine temperature exceeds a threshold over-temperature point, this occurrence is sensed and the circuitry of the indicator functions to automatically store and visually display the engine temperature as a function of time for the succeeding several seconds after the over-temperature condition has commenced. All the diodes of the matrix lying under the temperature versus time profile are energized so as to present a histogram display of the severity of the condition, where the severity is a function of the duration and magnitude of the over-temperature. In one embodiment disclosed herein, a plurality of over-temperature events are automatically sensed, graphically displayed and stored for later retrieval, such that the maintenance crew may subsequently interrogate the indicator device causing it to sequentially display each recorded or electronically stored over-temperature event.

13 Claims, 5 Drawing Figures